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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/720,344	11/25/2003	Alison J. McMillan	84714 3052 TAL	3908
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EXAMINER				
LIEW, ALEX KOK SOON				
ART UNIT		PAPER NUMBER		
2624				
MAIL DATE		DELIVERY MODE		
06/08/2009		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/720,344

**Applicant(s)**

MCMILLAN ET AL.

**Examiner**

ALEX LIEW

**Art Unit**

2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 18 March 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF/ICE)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

1. The amendment filed on 3/18/09 is entered and made of record.
2. Response to Applicant's arguments

On page 10, the applicant stated: "As discussed previously during the interview, Tsap does not teach that the rate of change of the variable is used to adjust compression. Nowhere does Tsap even teach or suggest monitoring the rate of change of any variable. Even if Tsap did disclose monitoring a rate of change, Tsap does not teach using high rates of change to automatically adjust the compression rate for high fidelity and using low rates of change to automatically adjust the compression rate for low fidelity. For this reason alone, the Section 103 rejection should be withdrawn." Examiner will withdraw Tsap reference. However, in a new search examiner found Go (US pat no 5,949,910) which reads on the claimed invention.

Go discloses a computer system programmed to process a large data set (an image contains large amount of pixel data) includes means for analyzing the data set and means for applying a data compression technique to the analyzed data set such that the compressed analyzed data set (see column 2, lines 43-48) has high fidelity in regions of interest and has lower fidelity in regions of lesser interest (column 1, lines 47-60, an image inherently contains high and low frequency components) wherein the computer system also comprises means to automatically select a variable from the data set such that a high rate of change of the variable indicates the regions of interest and a low rate of change of the variable indicates the regions of lesser interest (column 7, lines 5-14,

Xc is the selected variable, a high pass/sharpening filter is applied to the pixel Xc, to detect whether Xc is an edge pixel or a non-edge pixel, if it is an edge pixel it has a high rate of change between current pixel and its neighbor pixel, if is not an edge pixel then the rate of change between the current pixel and its neighboring pixel is low).

### **DETAILED ACTION**

#### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3, 7, 9-11, 15, 18, 19 and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Go (US pat no 5,949,910).

With regards to claim 1, Go discloses a computer system programmed to process a large data set (an image contains large amount of pixel data) includes means for analyzing the data set and means for applying a data compression technique to the analyzed data set such that the compressed analyzed data set (see column 2, lines 43-48) has high fidelity in regions of interest and has lower fidelity in regions of lesser interest (column 1, lines 47-60, an image inherently contains high and low frequency components) wherein the computer system also comprises means to automatically select a variable from the data set such that a high rate of change of the variable

indicates the regions of interest and a low rate of change of the variable indicates the regions of lesser interest (column 7, lines 5-14,  $X_c$  is the selected variable, a high pass/sharpening filter is applied to the pixel  $X_c$ , to detect whether  $X_c$  is an edge pixel or a non-edge pixel, if it is an edge pixel it has a high rate of change between current pixel and its neighbor pixel, if is not an edge pixel then the rate of change between the current pixel and its neighboring pixel is low).

With regards to claim 2, Go discloses the data compression technique comprises the use of a wavelet compression technique (column 2, lines 65-67).

With regards to claim 3, Go discloses the data compression technique produces high fidelity in geometric regions of interest at points in time of interest (see column 1, lines 47-60, the high fidelity areas are the high frequency components).

With regards to claim 7, Go discloses means for analyzing the data set comprises a means for finite element analysis (an image contains a finite number of pixels, the analysis performed on the image is finite in terms of the using finite amount of data).

With regards to claims 9 and 18, see the rationale and rejection for claim 1.

With regards to claim 10 and 19, see the rationale and rejection for claim 2.

With regards to claim 11, see the rationale and rejection for claim 3.

With regards to claims 15 and 23, see the rationale and rejection for claim 7.

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 4, 12 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Go '910 in view of Tsap (US pub no 2001/0040997).

With regards to claim 4, Go discloses all the limitations of claim 1, but do not disclose a geometric region has a rapid change in the stress field. Tsap discloses a geometric region has a rapid change in the stress field (see figure 6, area 602 maybe stretch to a degree where stress will occur). One skilled in the art would include stress field and deformation parameters because to examine the material properties of a non-rigid object, to improve quality control of manufacturing object.

With regards to claims 12 and 20, see the rationale and rejection for claim 4.

2. Claim 8, 16 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Go '910 in view of Atsumi (US pat no 6,801,665).

With regards to claim 24, Go discloses all the limitations of claim 1, but do not disclose, but does not disclose a local work station and a graphical display is produced at the local workstation. Atsumi discloses a local work station and a graphical display is produced at the local workstation (see figure 18, element 812 is a local work station display). One skilled in the art would include a local work station because to allow user to enter and modify parameters to view results, allowing a trial by error method.

With regards to claim 8 and 16, see the rationale and rejection for claim 24.

3. Claim 25-27, 29 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Go '910 in view of Fall (US pat no 5,991,515).

With regards to claim 25, see the rationale for claim 1. In addition, GO does not disclose producing a graphical display of at least one view of the geometry. Fall discloses producing a graphical display of at least one view of the geometry (figure 4d). One skilled in the art would include such feature because to show user whether image is acceptable after compression.

With regards to claim 26 see the rationale for claim 2.

With regards to claim 27 see the rationale for claim 3.

With regards to claim 29, Fall discloses a local work station (see figure 1, 12).

With regards to claim 32, see the rationale for claim 7.

4. Claims 5, 13 and 21 are rejected U.S.C. 103(a) as being unpatentable over Go '910 as applied to claim 1 further in view of Ransford (US pat no 5,490,221).

With regards to claim 5, Go discloses all the limitations discussed in claim 1, but does not disclose analyzing data set which are 4D as described on page 1 of the specification lines 12 – 15. Ransford discloses analyzing data set, which are 4D data set (see figure 2, elements 20 and 22). One skilled in the ordinary art would include analyzing data set, which are 4D because to obtain greater details of the region of interest by including three dimensional data, to improve recognition of the region of interest in the image.

With regards to claims 13 and 21, see the rationale and rejection for claim 5.

5. Claim 30 is rejected U.S.C. 103(a) as being unpatentable over Go '910 in view of Fall '515 as applied to claim 25 further in view of Ransford (US pat no 5,490,221).



With regards to claim 30 see the rationale for claim 5.

6. Claims 6, 14 and 22 are rejected U.S.C. 103(a) as being unpatentable over Go '910 as applied to claim 1 further in view of Board (US pat no 6499350).

With regards to claim 6, Go discloses all the limitations discussed in claim 1, but do not disclose analyzing data set of a fan blade containment analysis of a casing when a fan blade impacts a foreign object during use. Board discloses analyzing data set of a fan blade containment analysis of a casing when a fan blade impacts a foreign object during use (see column 3, lines 50 to 56), of detecting defects because to find the shape and size of these regions to find the best compression ratio to compress the data where no desired data allowing the user to store more compressed data.

With regards to claims 14 and 22, see the rationale and rejection for claim 6.

7. Claim 31 is rejected U.S.C. 103(a) as being unpatentable over Go '910 in view of Fall '515 as applied to claim 25 further in view of Board (US pat no 6499350).

With regards to claim 31 see the rationale for claim 6.

8. Claims 33-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Go '910 in view of Tsap '997 and Sato (US pat no 5640462).

With regards to claim 33 to 36, see the rationale and rejection for claims 1 and 8. In addition, Go and Tsap do not disclose presenting the most significant cross-sectional, wherein said most significant cross-sectional views contains at least one of a stress, deformation rate or other variable above a threshold. Sato discloses selecting the most significant cross-sectional, wherein said most significant cross-sectional views contains at least one of a stress, deformation rate or other variable above a threshold (see column 9, lines 38 to 43, the detected portion with a defect is read as the most significant area, and a cross section is taken at the defect location; the pixel values representing a defect appearing in an image will be greater than adjacent pixels indicating a random edge). One skilled in the art would include presenting the most significant cross-sectional area because to allow the operator to perform necessary steps to correct the defect, further improving inspection process.

9. Claim 28 is rejected U.S.C. 103(a) as being unpatentable over Go '910 in view of Fall '515 as applied to claim 25 further in view of Tsap '997.

With regards to claim 28, see the rationale for claim 4.

### **Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALEX LIEW whose telephone number is (571)272-8623 or cell (917)763-1192. The examiner can be reached anytime.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella can be reached on (571) 272-7778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Matthew C Bella/  
Supervisory Patent Examiner, Art  
Unit 2624

Alex Liew  
AU2624  
6/3/09